INDEX TO VOLUME XVII.

APRIL TO SEPTEMBER, 1899.

The titles first appearing under each classification-head are those of leading articles in the Magazine. The titles in smaller type, which follow, indicate articles from other journals which have been editorially noticed in the "Review of the Engineering Press."

ARCHITECTURAL ENGINEERING.

PAGE.

THE NEW TERMINAL OF THE ORLEANS RAILWAY AT THE QUAI D'ORSAY . . *Jacques Boyer* 57
With 19 Illustrations.

THE BUILDINGS OF THE PARIS EXPOSITION OF 1900 . . . . . *Jacques Boyer*
I. The Structures on the Champs Elysees and the Champs de Mars 455
II. The River Banks and the Esplanade des Invalides 645
With 12 Illustrations.

REVIEWS.

Architecture, Engineering in..... 156
Buildings, Engineering in Modern.... 503
Buildings, Structural Design of..... 692
Buildings, Wind Pressure on..... 671
Chimneys of the Exposition Power Plant 682
Design of Buildings, Structural..... 692
Electric Plant, Waldorf-Astoria..... 688
Engineering in Architecture..... 156
Engineering in Modern Buildings..... 503
Exposition Power Plant, Chimneys of the 682
Masonry Construction..... 157
Piping, Steam..... 295
Power Plant, Chimneys of the Exposition 682
Proportion, Theory of Architectural.. 508
Steam Piping..... 295
Structural Design of Buildings..... 692
Waldorf-Astoria Electric Plant..... 688
Wind Pressure on Buildings..... 671

INDEX to leading articles on Architecture in the Architectural and Engineering Press, including Construction and Design, Heating and Ventilation, Landscape Gardening, Plumbing and Gas-Fitting, and Miscellany.....161, 319, 513, 697, 863, 1023.

CIVIL ENGINEERING.

PAGE.

THE MERITS AND PERMANENCY OF THE MASONRY ARCH BRIDGE . . . . *Albert W. Buel* 23
With 28 Illustrations.

INTERNATIONAL ASSOCIATION FOR TESTING MATERIALS . . . . . *Gus C. Henning* 122

THE CONSTRUCTION OF THE ALEXANDER III. BRIDGE, PARIS . . . . . *Jacques Boyer* 214
With 19 Illustrations.

PHYSICAL AND COMMERCIAL ASPECTS OF THE WORLD'S SHIP-CANALS . . . . *E. L. Corthell* 277

ENGINEERING DEVELOPMENT OF PORTO RICO *H. M. Wilson* 602
With 21 Illustrations.

THE ENGINEFR AND THE ROAD TO THE GOLD FIELDS . . . . . *Harrington Emerson* 750
With 24 Illustrations.

THE WATER SUPPLY OF THE CITY OF GLASGOW *Benjamin Taylor* 941
With 12 Illustrations.

REVIEWS.

Acetylene Mixtures, The Behaviour of 500
American Bridge Design, English and. 673
American Society of Civil Engineers.. 853
Austria, Railway Trestles in..... 307
Berlin, Refuse Destruction in..... 851
Brick-Making in the United States.... 158
Bridge Design, English and American. 673
Bridges, The Action of Engine Gases upon 1013
Buildings, Engineering in Modern.... 503
Calcutta, Port of..... 843
Calibration of Current Meters..... 680
Canal Commission, Isthmian..... 857
Canal Lift, A Novel.....1011
Canal, Marseilles..... 846
Cement, Tests of Portland..... 681
Chicago Drainage Canal..... 509
Civil Engineers, American Society of.. 853
Concrete, Reinforced..... 303
Current Meters, Calibration of..... 680
Drainage Canal, Chicago..... 509
Electrolysis, The Problem of..... 507
Engine Gases, Action Upon Bridges...1013
Engineering in Modern Buildings..... 503
Engineering Expeditions.....1015
English and American Bridge Design. 673
Flow of Water Through Valves..... 859
Hot Water in Sewers..... 684
Institution of Civil Engineers, Conference of..... 837
Irish Channel Tunnel..... 999
Iron, Protection from Rust..... 142
Isthmian Canal Commission..... 857
Marseilles Canal..... 846
Masonry Construction..... 157
Melan Bridge at Steyr..... 150
Meters, Calibration of Current..... 680
Meters, Municipal Water..... 691
Motor Vehicles, Municipal Advantages of 487
Municipal Water Meters..... 691
Pittsburg, Water Filtration at..... 155
Port of Calcutta..... 843
Portland Cement, Tests of..... 681
Potable Water, The Sterilisation of... 847
Protection of Iron from Rust..... 142
Railway Trestles in Austria..... 307
Refuse Destruction in Berlin..... 851
Refuse Destructors, Performance of.. 294
Reinforced Concrete..... 303
St. Gotthard Tunnel, Ventilation of... 850
Sewers, Hot Water in..... 684
Simplon Tunnel..... 845
Sterilisation of Potable Water..... 847
Steyr, Melan Bridge at..... 150
Structures, Comparison of Similar.... 674
Tests of Portland Cement..... 681
Trusses, Tests of Timber..... 139
Tunnel, Irish Channel..... 999
Tunnel, Simplon..... 845
Tunnel, Ventilation of St. Gotthard... 850
United States, Brick-Making in..... 158
Valves, Flow of Water Through..... 859
Ventilation of St. Gotthard Tunnel... 850
Water Filtration at Pittsburg..... 155
Water Meters, Municipal..... 691
Water-Power Governing.....1019
Water Works, A Unique..... 304
Yport, Water Works at..... 304

INDEX to leading articles on Civil Engineering in the Engineering Press, including Bridges, Canals, Rivers and Harbors, Hydraulics, Irrigation, Gas, Sewerage, Streets and Pavements, Water Supply and Miscellany.....163, 179, 320, 343, 514, 524, 698, 709, 864, 874, 1024, 1034

ECONOMICS AND INDUSTRY.

PAGE.

MACHINE-SHOP MANAGEMENT IN EUROPE AND AMERICA . . . . . *H. F. L. Orcutt*
IV. Commercial Organisation and Shop Management . . 15
V. The Development of Trade under Competitive Conditions . . 268
VI. Comparisons as to Efficiency of Machinery and Methods . . 384
VII. Elements of a Modern Machine Shop 594
VIII. Elements of a Modern Machine Shop (*Concluded*) . . . 743
THE DEPRECIATION OF PLANT AND ITS RELATION TO GENERAL EXPENSE . . *H. M. Norris* 76
THE PROSPECTIVE EXPANSION IN AMERICAN SHIP-BUILDING . . . . . *G. R. Dunell* 105
AMERICA AND GERMANY AS EXPORT COMPETITORS AND CUSTOMERS . . . *Louis J. Magee* 115
III. Suggestions from German Commercial and Industrial Methods

INTERNATIONAL ASSOCIATION FOR TESTING MATERIALS	*Gus C. Henning*	122
THE POSSIBILITIES OF LIQUID AIR	*Elihu Thomson*	197
HYDRAULIC TRANSMISSION AND DISTRIBUTION OF POWER	*E. B. Ellington*	
I. An Analysis of the Cost of Generation and Transmission		233
With 6 Illustrations.		
MINERAL RESOURCES OF THE ANTILLES, HAWAII, AND THE PHILIPPINES	*David T. Day*	242
PHYSICAL AND COMMERCIAL ASPECTS OF THE WORLD'S SHIP-CANALS	*E. L. Corthell*	277
THE IRON INDUSTRY OF SWEDEN	*David A. Louis*	426
With 13 Illustrations.		
METHODS OF REMUNERATING LABOUR	*P. J. Darlington*	444
With 1 Diagram.		
THE INDUSTRIAL SITUATION IN JAPAN	*Lamar Lyndon*	470
THE INCREASING PRODUCTION OF GOLD	*H. M. Chance*	562
ENGINEERING DEVELOPMENT OF PORTO RICO	*H. M. Wilson*	602
With 21 Illustrations.		
THE DEVELOPMENT OF GERMAN SHIP-BUILDING	*Rudolph Haack*	
I. Enormous Progress Since the Consolidation of the Empire		727
II. The Ship-Yards on the North-Sea Coast		909
With 15 Illustrations.		
THE ENGINEER AND THE ROAD TO THE GOLD FIELDS	*Harrington Emerson*	750
With 24 Illustrations.		
THE UTILISATION OF THE WATER POWERS OF ITALY	*Enrico Bignami*	778
THE WITWATERSRAND MINES AND THE BOER GOVERNMENT	*Frederick H. Hatch*	812
ENGLAND, AMERICA AND GERMANY AS ALLIES FOR THE OPEN DOOR	*Hon. John Barrett*	893
SYSTEMS FOR THE REMUNERATION OF LABOUR	*P. J. Darlington*	925

REVIEWS.

Aluminum for Household Utensils.... 685
America, Engineering Methods in England and..... 493
American Locomotives for Foreign Railways 858
American Workmen, English and..... 839
British Coal Supplies..... 677
Calcutta, Port of..... 843
Canal Commission, Isthmian..... 857
Canal, Marseilles..... 846
Coal Supplies, British..... 677
Electric Power in the United States... 313
Electricity in Agriculture..... 143
Engineering and Politics.....1018
Engineering Methods in England and America 493
Engineering Profession..... 505
Engineering, Science and..... 838
English and American Workmen..... 839
Foreign Railways, American Locomotives for..... 858
Gas Engine and the Smoke Problem.. 301
Glass, Experiments on the Strength of.1012
Gold, Production of..... 310
Household Utensils, Aluminum for... 685
Inter-Continental Railroad..... 153
Iron and Steel Industry, Progress in.. 506
Isthmian Canal Commission..... 857
Liquid Air Plant, A Commercial..... 693
Locomotives for Foreign Railways, American 858
Marseilles Canal..... 846
Politics and Engineering.....1018
Port of Calcutta..... 843
Potable Water, The Sterilisation of... 847
Production of Gold..... 310

Railway, Progress of Siberian..... 145
Refuse Destructors, Performance of.. 294
Science and Engineering..... 838
Siberian Railway, Progress of..... 145
Smoke Problem, Gas Engine and the.. 301
Sterilisation of Potable Water..... 847
United States, Electric Power in the.. 313
Workmen, English and American.... 839

INDEX to leading articles on Economics and Industry and Industrial Sociology in the Engineering Press, and Current Reviews, including Commerce and Trade, Currency and Finance, Governmental Control, Labour, will be found under Miscellany in the various departments.

ELECTRICAL ENGINEERING.

PAGE.

CENTRAL STATION PRACTICE IN GREAT BRITAIN . . . . . *H. Cuthbert Hall* 206

THE INFLUENCE OF ELECTRICITY UPON RAILWAY LOCOMOTION . . . . . *B. H. Thwaite* 415

ELECTRIC POWER FOR MARINE PROPULSION . *Charles T. Child* 477

ENGINEERING DEVELOPMENT OF PORTO RICO . *H. M. Wilson* 602
With 21 Illustrations.

THE UTILISATION OF THE WATER POWERS OF ITALY . . . . . *Enrico Bignami* 778

SHORT-DISTANCE ELECTRIC-POWER DISTRIBUTION . . . . . *James Swinburne* 827

ELECTRICITY IN THE MINES AT CRIPPLE CREEK *Thomas Tonge* 953
With 16 Illustrations.

REVIEWS.

Agriculture, Electricity in..... 143
Conductivity at High Temperatures...1005
Delivery Wagons, Electric.....1016
Electric Motor in the Machine Shop.. 147
Electric Plant, A Great..... 688
Electric Power in the United States.. 313
Electric Vehicles, Design of..... 856
Electrical Energy, The Storage of..... 499
Electricity on Board Ship..... 309
Electricity upon Main-Line Railways.. 306
Electrolysis, The Problem of..... 507
Electro-Metallurgy, Progress of..... 495
Energy, The Storage of Electrical.... 499
Germany, Electric Works in.....1010
Machine Shop, Electric Motor in the.. 147
Main-Line Railways, Electricity Upon. 306
Mining Operations, Electricity in..... 489
Nernst Lamp..... 136
Ship, Electricity on Board..... 309
Telegraphy Across Space..... 296
Telephone Engineering, Problems in.. 689
United States, Electric Power in the.. 313
Vehicles, Design of Electric..... 856
Waldorf-Astoria Electric Plant..... 688
Wireless Telegraphy..... 296

INDEX to leading articles on Electrical Engineering in the Engineering Press, including Electro-Chemistry and Metallurgy, Lighting, Power, Telegraphy and Telephony, and Miscellany.....
.....167, 323, 519, 703, 869, 1029.

MARINE AND NAVAL ENGINEERING.

PAGE.

THE MONITOR, THE BATTLE-SHIP, THE CRUISER, AND THE DESTROYER . . *G. W. Dickie*

I. Their Design and Equipment from the Engineer's and the Ship-Builder's Viewpoint . . I
With 8 Illustrations.

II. The Construction and Functions of the Cruiser and Destroyer . 189
With 5 Illustrations.

THE WORK OF THE NAVAL REPAIR SHIP VULCAN . . . . *Gardiner C. Sims and Wm. S. Aldrich*

I. The Floating Machine Shop of the American Navy . . 359
With 17 Illustrations.

II. Efforts to Raise the Sunken Spanish Wrecks 569
With 14 Illustrations.

THE PROSPECTIVE EXPANSION IN AMERICAN SHIP-BUILDING . . . . . *G. R. Dunell* 105
ELECTRIC POWER FOR MARINE PROPULSION *Charles T. Child* 477
THE DEVELOPMENT OF GERMAN SHIP-BUILDING . . . . . *Rudolph Haack*
I. Enormous Progress Since the Consolidation of the Empire . . 729
With 11 Illustrations.
II. The Ship-Yards on the North-Sea Coast 909
With 15 Illustrations.

REVIEWS.

Auxiliaries, Wastefulness of Steam... 296
Battle-Ship, Launching of a.....1000
Boilers, Care of Marine..... 490
Boiler Material, Improvements in..... 154
Boilers, Water-Tube, in the Navy.... 488
Compressed Air to Save Ships..... 694
Condensing Plants, Separate..... 840
Dry Docks, Wooden and Masonry.... 152
Electricity on Board Ship..... 309
Ice-Breaking Boats in Russia..... 502
Ice-Breaking Steamboats.....1002
Launching of a Battleship.....1000
Marine Boilers, Care of..... 490
Mechanical Engineering and Ship-Building 676
Ocean Steamers, Construction of..... 138
Propeller Shafts, Failure of..... 298
Russia, Ice-Breaking Boats in..... 502
Separate Condensing Plants..... 840
Shafts, Failure of Propeller..... 298
Shipbuilding, Mechanical Engineering and 676
Ships, Compressed Air to Save..... 694
Speeds at Sea, Steam..... 141
Steam Auxiliaries, Wastefulness of... 296
Steamboats, Ice-Breaking.....1002
Structural Strength of Ships..... 492
Testing Tank at Washington..... 855
Water-Tube Boilers, Durability of....1001
Water-Tube Boilers in the Navy..... 488

INDEX to leading articles on Marine and Naval Engineering in the Engineering Press and Current Reviews, including Boilers and Engines, Naval Affairs, and Miscellany.....171, 175, 329, 336, 525, 710, 876, 1035.

MECHANICAL ENGINEERING.

PAGE.
MACHINE-SHOP MANAGEMENT IN EUROPE AND AMERICA . . . . . *H. F. L. Orcutt*
IV. Commercial Organisation and Sales Management . . 15
V. The Development of Trade Under Competitive Conditions . . 268
VI. Comparison as to Efficiency of Machinery and Methods . 384
VII. Elements of a Modern Machine Shop 594
VIII. Elements of a Modern Machine Shop (*Concluded*) . 743
THE DEPRECIATION OF PLANT, AND ITS RELATION TO GENERAL EXPENSE . . *H. M. Norris* 76
THE DEVELOPMENT OF WOOD-WORKING MACHINERY . . . . . *John Richards*
I. European Sawing Machinery and Saw Benches 88
With 21 Illustrations.
II. European and American Planing, Flooring, and Moulding Machines 252
With 19 Illustrations.

INTERNATIONAL ASSOCIATION FOR TESTING MATERIALS	*Gus C. Henning*	122
HYDRAULIC TRANSMISSION AND DISTRIBUTION OF POWER		
I. An Analysis of the Cost of Generation and Distribution. With 6 Illustrations.	*E. B. Ellington*	233
II. Mechanical Aspects of Delivery and Utilisation. With 11 Illustrations.		399
EFFICIENCY OF STEAM BOILERS AND FURNACES	*R. S. Hale*	622
THE EVOLUTION AND FUTURE OF THE GAS ENGINE. With 5 Illustrations	*Georg Lieckfeld*	656
EVOLUTION AND FUTURE OF BENZINE AND PETROLEUM ENGINES. With 3 Illustrations.	*Georg Lieckfeld*	818
SHORT-DISTANCE ELECTRIC POWER DISTRIBUTION	*James Swinburne*	827
ECONOMY IN THE USE OF SUPERHEATED STEAM	*R. S. Hale*	903
MECHANICAL USES OF THE SCIENCE OF METALLOGRAPHY. With 20 Illustrations.	*Albert Sauveur*	977

REVIEWS.

American Machine Works in England. 997
American Workmen, English and..... 839
Architecture, Engineering in..... 156
Automobile Association.....1014
Automobiles, Steam..... 137
Auxiliaries, Wastefulness of Steam... 296
Bicycle, Efficiency of the..... 687
Blast Furnace Gases, Progress in the Use of..... 849
Boiler Material, Improvements in..... 154
Chimneys of the Exposition Power Plant 682
Coals, Tests of Steam..... 504
Compressed-Air Motors in New York. 690
Compression in Steam Cylinders..... 146
Condensers, Central..... 144
Connections, Experiments on Steam... 501
Cooling Towers.....1017
Diesel Motor, Progress of..... 148
Drawings, Care of..... 312
Efficiency of the Bicycle..... 687
Electric Motor in the Machine Shop.. 147
Engineering in Architecture..... 156
Engines for Superheated Steam..... 311
England, American Machine Works in 997
England and America, Engineering Methods in..... 493
English and American Workmen..... 839
Exposition Power Plant, Chimneys of the 682
Flow of Water Through Valves..... 859
Furnace Gases, Power from..... 683
Gas Engine, A Study of the..... 497
Gas Engine and the Smoke Problem.. 301
Horse-Power, Measure of..... 299
Iron, Protection from Rust..... 142
Liquid Air Plant, A Commercial..... 693
Machine Shop, Electric Motor in the.. 147
Machine Tools..... 491
Machine Tools, Modern..... 297
Machine Tools, Power Required by... 679
Mechanical Engineering and Shipbuilding 676
Motors, Compressed-Air, in New York 690
Motor-Vehicles, Petroleum..... 672
Motor Vehicles, Municipal Advantages of 487
Navy, Water-Tube Boilers in..... 488
Paris, Traveling Sidewalk at..... 302
Petroleum Motor-Vehicles..... 672
Piping, Steam..... 295
Power from Furnace Gases..... 683
Power Gas, A Study of.....1009
Power Plant, Chimneys of the Exposition 682
Power Required by Machine Tools.... 679
Protection of Iron from Rust..... 142
Rolling Mills, Steam Engines for..... 848
Shipbuilding, Mechanical Engineering and 676
Smoke Problem, Gas Engine and the.. 301
Steam Auxiliaries, Wastefulness of... 296
Steam Connections, Experiments on.. 501
Steam Cylinders, Compression in..... 146
Steam Engines for Rolling Mills..... 848
Steam Jacket, Functions of the..... 496
Steam Pipes and Fittings..... 842
Steam Pipes, Water Hammer in.....1007
Steam Piping 295
Steam, Superheated 685
Superheated Steam, Engines for..... 311
Tests of Steam..... 504
Timber Trusses, Tests of..... 139
Traveling Sidewalk at Paris..... 302

Trusses, Tests of Timber..... 139
Valves, Flow of Water Through..... 859
Water Hammer in Steam Pipes.....1007
Water-Tube Boilers, Durability of....1001
Water-Tube Boilers in the Navy..... 488
Workmen, English and American.... 839
INDEX to leading articles on Mechanical Engineering in the Engineering Press, including Boilers, Furnaces and Firing, Compressed Air, Engines and Motors, Power and Transmission, Shop and Foundry, and Miscellany.....172, 330, 527, 712, 878, 1036.

MINING AND METALLURGY.

		PAGE.
MINERAL RESOURCES OF THE ANTILLES, HAWAII, AND THE PHILIPPINES . .	*David T. Day*	242
THE IRON INDUSTRY OF SWEDEN . . . With 13 Illustrations.	*David A. Louis*	426
THE INCREASING PRODUCTION OF GOLD .	*H. M. Chance*	562
ENGINEERING DEVELOPMENT OF PORTO RICO With 21 Illustrations.	*H. M. Wilson*	602
THE GREAT MAGNETITE DEPOSITS OF SWEDISH LAPLAND . . . . . With 15 Illustrations.	*David A. Louis*	632
THE ENGINEER AND THE ROAD TO THE GOLD FIELDS . . . . . With 24 Illustrations.	*Harrington Emerson*	750
THE WITWATERSRAND MINES AND THE BOER GOVERNMENT	*Frederick H. Hatch*	812
ELECTRICITY IN THE MINES AT CRIPPLE CREEK With 16 Illustrations.	*Thomas Tonge*	953
MECHANICAL USES OF THE SCIENCE OF METALLOGAPHY . . . . With 20 Illustrations.	*Albert Sauveur*	977

REVIEWS.

Alloys, Action of Sea-Water Upon... 307
Alloys, Influence of Temperature Upon 305
Alloys, Study of..... 135
Blast Furnace and Coke Oven Gases.. 675
Blast Furnace Gases, Progress in the Use of..... 849
British Coal Supplies..... 677
By-Product Coke Ovens..... 151
Coal-Cutting Machinery..... 854
Coal Mines, Spontaneous Combustion in 140
Coal Supplies, British..... 677
Coals, Tests of Steam..... 504
Coke Oven Gases, Blast Furnace and.. 675
Coke Ovens, By-Product..... 151
Electricity in Mining Operations..... 489
Electro-Metallurgy, Progress of..... 495
Explosives, Handling of High..... 841
Explosives, Safety Mining..... 293
Furnace Gases, Power from..... 683
Gases, Blast Furnace and Coke Oven.. 675
Gold, Methods of Prospecting for..... 315
Gold, Production of..... 310
High Explosives, Handling of..... 841
Iron and Steel Industry, Progress in.. 506
Iron, Protection from Rust..... 142
Machinery, Coal-Cutting..... 854
Metallography, The Development of.. 498
Power from Furnace Gases..... 683
Production of Gold..... 310
Prospecting for Gold, Methods of..... 315
Protection of Iron from Rust..... 142
Rolling Mills, Steam Engines for..... 848
Safety Mining Explosives..... 293
Sea-Water, Action upon Alloys..... 307
Spontaneous Combustion in Coal Mines 140
Steam Engines for Rolling Mills..... 848
Temperature, Influence upon Alloys...305
Tests of Steam Coals..... 504
INDEX to leading articles on Mining and Metallurgy in the Engineering Press, Including Coal and Coke, Copper, Gold and Silver, Iron and Steel, Mining, and Miscellany....176, 337, 534, 719, 883, 1041.

RAILWAY AFFAIRS.

		PAGE.
COMMERCIAL ASPECTS OF ELECTRIC TRACTION IN GREAT BRITAIN..	*Emile Garcke*	45
THE NEW TERMINAL OF THE ORLEANS RAILWAY AT THE QUAI D'ORSAY . . With 19 Illustrations.	*Jacques Boyer*	57
THE INFLUENCE OF ELECTRICITY UPON RAILWAY LOCOMOTION	*B. H. Thwaite*	415

ENGLISH AND AMERICAN LOCOMOTIVE BUILDING . . . . . *Charles Rous-Marten*

I. Why American Engines Are Built for English Railways . . 545
With 12 Illustrations.

II. Salient Differences in Design and Construction 790
With 25 Illustrations.

III. Opinion of Authorities on their Design and Performance . 968

ENGINEERING DEVELOPMENT OF PORTO RICO *H. M. Wilson* 602
With 21 Illustrations.

THE ENGINEER AND THE ROAD TO THE GOLD FIELDS . . . . . *Harrington Emerson* 750
With 24 Illustrations.

REVIEWS.

American Locomotives, English and.. 493
American Locomotives for Foreign Railways 858
Atmospheric Railways 1003
Austria, Railway Trestles in..... 307
Automatic Couplers 998
Bridges, Action of Engine Gases upon. 1013
Cattle-Cars, Disinfection of..... 149
Compound Locomotives..... 508
Construction, Permanent Way..... 314
Disinfection of Cattle-Cars..... 149
Engine Gases, Action upon Bridges... 1013
English and American Locomotives... 493
Electricity upon Main-Line Railways.. 306
Foreign Railways, American Locomotives for..... 858
Inter-Continental Railroad..... 153
Irish Channel Tunnel..... 999
Locomotives, Compound..... 508
Locomotives, English and American.. 493
Locomotives for Foreign Railways, American 858
Main-Line Railways, Electricity Upon 306
Paris, Railway Terminals in..... 1006
Permanent Way Construction..... 314
Rail Sections, Heavy..... 153
Railway Trestles in Austria..... 307
Resistance, Formulas for Train..... 315
St. Gotthard Tunnel, Ventilation of... 850
Siberian Railway, Progress of..... 145
Simplon Tunnel..... 845
Terminals in Paris, Railway..... 1006
Train Resistance, Formulas for..... 315
Tunnel, Irish Channel..... 999
Tunnel, Simplon..... 845
Tunnel, Ventilation of St. Gotthard... 850

INDEX to leading articles on Railway Affairs in the Engineering Press, including Conducting Transportation, Financial, Legal, Motive Power and Equipment, New Projects, Permanent Way and Fixtures, Traffic, and Miscellany..... 182, 348, 538, 724, 888, 1045.

STREET AND ELECTRIC TRAMWAYS.

PAGE.

COMMERCIAL ASPECT OF ELECTRIC TRACTION IN GREAT BRITAIN . . . . . *Emile Garcke* 45

ENGINEERING DEVELOPMENT OF PORTO RICO *H. M. Wilson* 602
With 21 Illustrations.

THE UTILISATION OF THE WATER POWERS OF ITALY . . . . . *Enrico Bignami* 778

INDEX to leading articles on Street and Electric Tramways in the Engineering Press..... 184, 353, 541, 727, 891, 1048.

REVIEWS.

Atmospheric Railways 1003
Dusseldorf-Krefeld Tramway 1008

EDITORIAL COMMENT.

131, 289, 483, 667, 833, 993

REVIEW OF THE ENGINEERING PRESS.

The British Press..... 135, 293, 487, 671, 837, 997.
The Continental Press..... 143, 301, 495, 679, 845, 1005.
The American Press..... 151, 309, 503, 687, 853, 1013.

BOOK REVIEWS.

Notices under this head appear on Pages..... 186, 355.